

1 1. A method of remotely controlling, by a server, the formation of an off-screen  
2 surface at a client coupled to the server via a communications network, the method being  
3 performed at the server and comprising the steps of:

4 instructing the client to select a first memory region for allocation to the off-  
5 screen surface, the first memory region corresponding to a memory coupled to the  
6 client;

7 transmitting indicia of a graphical data to the client; and

8 instructing the client to copy the graphical data associated with the indicia to a  
9 particular location within the first memory region.

1 2. The method of claim 1 further comprising the step of:

2 specifying a plurality of attributes associated with the off-screen surface.

1 3. The method of claim 1 wherein the indicia of the graphical data corresponds to a  
2 fuzzy key, the fuzzy key identifying a location of the graphical data within a persistent  
3 storage memory coupled to the client.

1 4. The method of claim 1 wherein the indicia of the graphical data corresponds to an  
2 index, the index identifying a location of the graphical data within a cache memory  
3 coupled to the client.

1 5. The method of claim 1 further comprising the step of:  
2 instructing the client to update an on-screen surface associated with the client  
3 using the copied graphical data in the off-screen surface.

1 6. The method of claim 1 further comprising the step of:  
2 storing a duplicate of the off-screen surface in a memory coupled to the server.

1 7. The method of claim 6 further comprising the steps of:  
2 upon receiving an indication of an error condition, transmitting at least one  
3 portion of the duplicate off-screen surface to the client; and  
4 instructing the client to copy the at least one portion of the duplicate off-screen  
5 surface to an on-screen surface associated with the client.

1 8. The method of claim 1 further comprising the steps of:  
2 a) instructing the client to select a second memory region; and  
3 b) instructing the client to copy the graphical data to a particular location  
4 within the second memory region,  
5 wherein step a) is performed in response to receiving an indication of an  
6 error condition.

1 9. The method of claim 1 wherein the graphical data corresponds to a bitmap.

1 10. The method of claim 1 wherein the graphical data corresponds to a glyph.

1 11. The method of claim 1 wherein the graphical data corresponds to a strip.

1 12. A system for remotely controlling, by a server, the formation of an off-screen  
2 surface at a client coupled to the server via a communications network, the system  
3 comprising:

4 a client agent executing on the client;

5 a first memory region coupled to the client agent;

6 an off-screen surface stored within the first memory region;

7 a server agent executing on the server and coupled to the client agent; and

8 a graphical data, the graphical data having associated indicia and being stored by  
9 the client,

10 wherein the server agent

11 transmits indicia of the graphical data to the client agent, and

12 instructs the client agent to copy the graphical data associated with the indicia to a  
13 particular location within the first memory region.

1 13. The system of claim 12 wherein the indicia of the graphical data corresponds to a  
2 fuzzy key, the fuzzy key identifying a location of the graphical data within a persistent  
3 storage memory coupled to the client.

1 14. The system of claim 12 wherein the indicia of the graphical data corresponds to an  
2 index, the index identifying a location of the graphical data within a cache memory  
3 coupled to the client.

1 15. The system of claim 12 wherein attributes of the off-screen surface are specified  
2 by the server agent.

1 16. The system of claim 12 further comprising a duplicate of the off-screen surface  
2 stored in a memory coupled to the server agent.

1 17. The system of claim 16 further comprising:  
2 an on-screen surface coupled to the client agent, the client agent updating the on-  
3 screen surface using the duplicate off-screen surface and discarding the off-screen surface  
4 stored within the first memory region upon the occurrence of an error condition.

1 18. The system of claim 12 wherein the graphical data corresponds to a bitmap.

1 19. The system of claim 12 wherein the graphical data corresponds to a glyph.

1 20. The system of claim 12 wherein the graphical data corresponds to a strip.